R E P O R T R E S U M E S

ED 017 606 UD 005 704

CONTINUOUS PROGRESS EDUCATION IN THE SEATTLE PUBLIC SCHOOLS, THE PROPOSED SOUTHEAST EDUCATION CENTER. DOCUMENTATION.

SEATTLE PUBLIC SCHOOLS, WASH.

PUB DATE 17 JAN 68

EDRS PRICE MF-$0.50 HC-$2.44 59P.

DESCRIPTORS- *CONTINUOUS PROGRESS PLAN, *SCHOOL ORGANIZATION, FLEXIBLE PROGRESS PROGRESSION, FLEXIBLE FACILITIES, RACIAL BALANCE, SCHOOL DISTRICTS, COMMUNITY INVOLVEMENT, TEAM TEACHING, SCHOOL ADMINISTRATION, DATA, TABLES (DATA), STUDENT PLACEMENT, RESEARCH, PROGRAM EVALUATION, CURRICULUM DESIGN, STUDENT CHARACTERISTICS, INSTRUCTIONAL TECHNOLOGY, COMMUNITY SCHOOLS, COMPUTER ORIENTED PROGRAMS, DEMOGRAPHY, INTERMEDIATE GRADES, INSTRUCTIONAL STAFF, SEATTLE, WASHINGTON, SOUTHEAST EDUCATION CENTER

THIS REPORT DESCRIBES A PROPOSED CONTINUOUS PROGRESS EDUCATIONAL CENTER WITH AN EXPECTED ENROLLMENT OF ABOUT 3,500 RACIALLY MIXED PUPILS AT ALL GRADE LEVELS. (A PRESCHOOL GROUP MAY BE ADDED, THUS RAISING THE TOTAL ENROLLMENT.) NO MORE THAN 50 PERCENT OF THE STUDENTS WILL BE NONWHITE AND NO SINGLE MINORITY GROUP (NEGRO, ORIENTAL, FILIPINO, OR AMERICAN INDIAN) WILL CONSTITUTE MORE THAN 33 PERCENT OF THE TOTAL ENROLLMENT. EACH STUDENT WILL RECEIVE INDIVIDUALIZED INSTRUCTION AND WILL PROGRESS AT HIS OWN RATE WITHIN AN INDIVIDUALLY DESIGNED PROGRAM OF STUDY. THE ARRANGEMENT OF SPACES AND FACILITIES IN THE CENTER WILL PROVIDE MAXIMUM FLEXIBILITY IN EDUCATIONAL PROGRAMING. IN GENERAL PUPILS WILL BE GROUPED ACCORDING TO PERFORMANCE CRITERIA. ALTHOUGH LANGUAGE ARTS AND MATHEMATICS WILL BE EMPHASIZED, SCIENCE, SOCIAL STUDIES, FINE AND PRACTICAL ARTS, OCCUPATIONAL ORIENTATION, AND WORK EXPERIENCE WILL ALSO BE OFFERED. AS WELL AS A REGULAR CONTINUOUS PROGRESS CURRICULUM, LEARNING PACKETS WITH BUILT-IN BEHAVIORAL OBJECTIVES, PRETESTS, SELF-TESTS, AND POSTTESTS WILL BE USED. THE TEACHER'S ROLE WILL BE ONE OF TEAM PARTNER, ACADEMIC SPECIALIST, AND GENERAL EDUCATOR. IT IS ALSO EXPECTED THAT PARENTS AND OTHER COMMUNITY RESIDENTS WILL BE INVOLVED IN THE CENTER'S OPERATION. STANDARDIZED APTITUDE AND ACHIEVEMENT TESTS AND OTHER TRADITIONAL MEASUREMENT INSTRUMENTS WILL BE USED TO EVALUATE THE CENTER'S ACTIVITIES, A COST EFFECTIVENESS TECHNIQUE FOR EVALUATION AND EXPERIMENTATION WILL BE USED TO ASSESS THE VALUE OF THE PROGRAM. AS PART OF THE GENERAL RESEARCH DESIGN, AN INFORMATION SYSTEM WILL DISSEMINATE RELEVANT PROGRAM INFORMATION TO STAFF MEMBERS THROUGHOUT THE CENTER. (LB)

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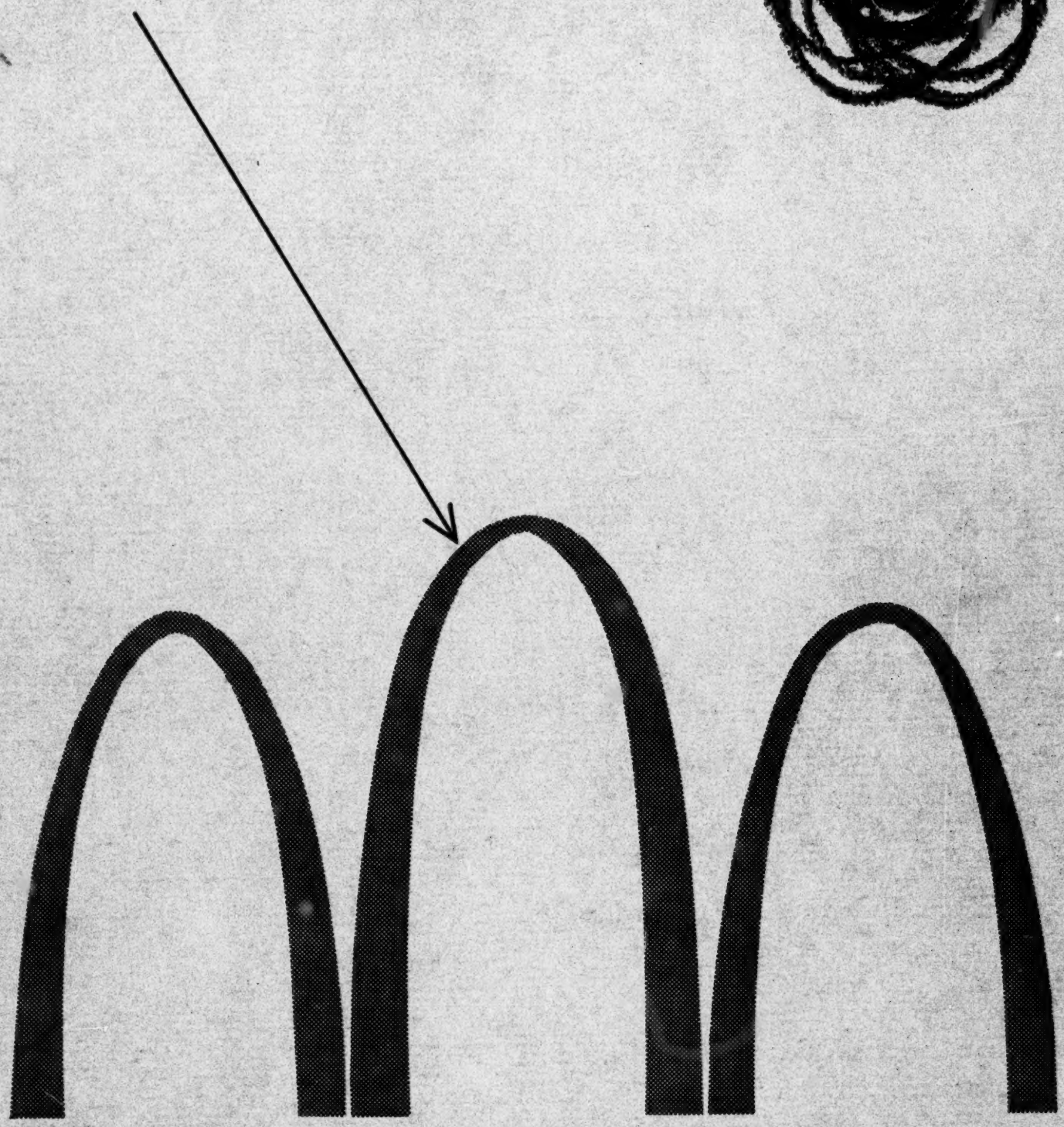

The Seattle School District's Proposed

Southeast Education Center

Documentation

UD 005 704

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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CONTINUOUS PROGRESS EDUCATION

IN THE SEATTLE PUBLIC SCHOOLS

THE PROPOSED SOUTHEAST EDUCATION CENTER

DOCUMENTATION

ED 005 704

January 17, 1968

DOCUMENTATION FOR THE TASK FORCE STUDY OF CONTINUOUS PROGRESS EDUCATION

INTRODUCTION

Documents and their authors in this section are included in the following order:

1.	Study Procedures and Resources)	Task Force
2.	Visitations and Consultants)	
3.	Pupils	James Moore
4.	Attendance Area Characteristics	James Moore
5.	Curriculum and Instruction	Elmo Little
6.	Interrelationship of Spaces in the Continuous Progress Center	Elmo Little
7.	Staff and Organization	Dale Goss
8.	Technology	Kent Stephens
9.	Transportation	Kent Stephens
10.	Research and Evaluation	James Moore
11.	Dissemination	Dale Goss

STUDY PROCEDURES AND RESOURCES

The task force members each assumed responsibility for preparing certain of the documentary statements on the following pages. The group was assisted in its study of the long-range building needs by staff members of the Maintenance Department of the Business and Plant Division.

Materials from many school districts throughout the Nation were studied during the investigation, several schools were visited, and some consultations were held with educational leaders. The task force suggests that many other significant school programs be visited and additional consultants interviewed during the development of specifications.

Outstanding school district programs studied were those at the Farig Elementary School, Cupertino, California; Valley Winds Elementary School, St. Louis County; Anniston schools, Alabama; Theodore, Alabama High School; Troy City, Alabama schools; Walker Elementary School, Tucson, Arizona; Edgar Elementary School, Garden Grove, California; Tamura School, Huntington Beach, California; Thurston Intermediate School, Laguna Beach, California; U.C.L.A. Campus Elementary School, Los Angeles; Klein Elementary School, Mountain View, California; Gunn High School, Palo Alto, California; Poway, California, Unified School District; Oberon Junior High School, Arvada, Colorado; Kullestrand Elementary School, Jefferson County, Colorado; Nova Schools, Ft. Lauderdale, Florida; Melbourne, Florida High School; Barrington, Illinois schools; Central School, Evanston, Illinois; Montgomery County schools, Rockville Maryland; Meadowbrook Junior High School, Newton Centre, Massachusetts; Western High School, Las Vegas, Nevada; Boscow School, Hillsboro, Oregon; Alameda Elementary School, Ontario, Oregon; Abington, Pennsylvania High School; Dixon High School, Provo, Utah; Roy, Utah, High School; West Elementary School, Aberdeen,

Washington; Ferris High School, Spokane, Washington; Pittsburgh, Pennsylvania schools; Flint, Michigan schools; Brentwood Elementary School, Palo Alto, California; John Marshall High School, Portland, Oregon; Ridgewood High School, Norridge, Illinois; Middletown High School, Middletown, Rhode Island; West High School, Cleveland, Ohio; Roosevelt High School, Portland, Oregon; Rex Putnam High School, Milwaukee, Oregon; John F. Kennedy High School, Cleveland, Ohio; Glendale Junior High School, Seattle, Washington; Selah High School, Selah, Washington.

VISITATIONS AND CONSULTANTS

Visited by staff members were: Flint, Michigan; Newton Centre, Massachusetts; Palo Alto, California; Mountain View, California; Los Angeles, California; Barrington and Evanston, Illinois; St. Mel High School, Chicago.

Among the specialists and educational leaders consulted were: Jerome Bruner, Harvard; Cyrus Sargent, N.Y.U.; George Brain, W.S.U.; Robert Seitzer, East Orange, New Jersey; Francis Ianni, Columbia University; Jack A. Lown, Minneapolis Facilities Consultant; Donald Lieu, Michigan State; James Russell, N.E.A.; John Flanagan, American Institutes for Research, Palo Alto; Sidney Rollins, Brown University; Norton Kristy, Technomics, Inc., Santa Monica; Madeline Hunter, U.C.L.A. Campus School; William M. Shanner, American Institutes for Research, Palo Alto; John Coulson and Jack Bratten, Systems Development Corporation, Santa Monica; Karl Anslem, Brentwood School, Palo Alto; John Gwinn, Stanford; Gordon Lee, Columbia; Dale Bolton, University of Washington; Preston LeBreton, University of Washington; David Beggs, N.A.S.S.P.; J. Lloyd Trump, N.A.S.S.P.; William Georgiades, U.S.C.; Terrence Hatch, University of Utah; Glen Ovard, Brigham Young University; Phil Kopher, Las Vegas Schools;

Pence Dacus, Pepperdine College; Gardner Swenson, Curriculum Bank, Laguna Beach, California.

PUPILS

Feeder Schools

The Southeast Education Center will draw its pupils and students from one senior high school (Grades 10-12), one junior high school (Grades 7-9), and at least six elementary schools (Grades K-6). Only pupils from Grades 5-6 will be drawn from five of those elementary schools, while all pupils from Grades K-6 will be drawn from the sixth elementary school.

The schools to be incorporated and/or affected by the Southeast Education Center include Rainier Beach Junior-Senior High School, and Mann, Colman, Rainier View, Emerson, South Van Asselt, and Dunlap Elementary Schools. Dunlap Elementary School is the elementary school from which all pupils in Grades K-6 will be drawn into the Southeast Education Center configuration, along with all of the pupils and students from Rainier Beach Junior-Senior High School and the pupils in Grades 5-6 from Mann, Colman, Rainier View, Emerson, and South Van Asselt Elementary Schools.

Enrollment Data

The Southeast Education Center will have as an enrollment approximately 3,373 pupils and students from Grades K-12. If the Head Start or preschool group is included, it will be nearer to 3,500 pupils. The possibility that the present proposed feeder schools may not provide an adequate balance of Negro pupils may require the addition of one other feeder school. Washington Junior High School has been considered below. In addition to these 3,500 there would be the pupils in Grades Head Start (preschool) - 4 at Mann, Colman, Rainier

View, Emerson, and South Van Asselt Elementary Schools who might enter the Southeast Education Center at the time they become eligible, that is in Grade 5 or its equivalent age level.

The enrollment by grade level in the Southeast Education Center, using 1967-68 enrollment data from all of the feeder schools, would be as shown in the following table:

TABLE I

Grade	Number Enrolled
12	357
11	355
10	373
9	369
8	323
7	314
6	369
5	419
4	92
3	98
2	110
1	108
K	116
Total enrolled	3,373

It has been suggested that Washington Junior High School 9th grade might be incorporated. If this were done, it would add 255 students to the Southeast Education Center. The continuous progress nature of the Center programs should make it possible to distribute many of these students throughout the Center configuration. The enrollment in the Southeast Education Center, including the Washington students, would then be about 3,600.

Racial Characteristics

One of the most important criteria for the selection of feeder schools for the Southeast Education Center was that of racial distribution and a partial easing of de facto segregation at some of the central city schools, namely, Mann and Colman Elementary Schools. The possible inclusion of Washington Junior High School is part of this criterion. In the next table (Table 2) is a breakdown of this distribution, including numbers and percentages by grade level and for the Center as a whole.

The relatively large numbers and percentages of non-white and Negro pupils in the Southeast Education Center for Grades 5-6 are the result of the incorporation of pupils in those grade levels from the feeder elementary schools, mainly Mann and Colman Elementary Schools. Most (205) of the Negro pupil total (305) drawn into the Southeast Education Center are in Grades 5-6, and Mann and Colman provide approximately 86 percent (176) of them.

The Final Report by the Seattle Citizens School Progress Planning Committee (August, 1967) contained recommendations to the effect that an ideal racial "balance" in the Center would include no more than 50 percent non-white and no more than 33 percent any minority group enrollment. This would mean that the Southeast Education Center would incorporate, for example, Negro pupils to a maximum of approximately 33 percent of the total enrollment so long as the inclusion of Japanese, Chinese, Filipino, American Indian, and other racial groups did not raise the total non-white enrollment over the 50 percent upper limit. The Final Report did not specify a lower limit, that is, a minimum enrollment of these racial groups; thus, it was necessary to come up with a suggested minimum figure and use that as a basis for including feeder schools with, among other criteria, sufficient Negro pupils to raise the proportion of

TABLE 2

RACIAL DISTRIBUTION OF STUDENTS IN THE SOUTHEAST EDUCATION CENTER

Gr.	Total Enroll.	White %	White No.	Nonwhite %	Nonwhite No.	Negro %	Negro No.	Japanese %	Japanese No.	Chinese %	Chinese No.	Filipino %	Filipino No.	Am. Ind. %	Am. Ind. No.	Other %	Other No.
12	327	89.8	294	10.2	33	2.9	9	4.2	13	1.9	6	.7	2	.1	1	.5	2
11	355	89.8	319	10.2	36	2.9	10	4.2	14	1.9	7	.7	2	.1	1	.5	2
10	373	89.8	335	10.2	38	2.9	10	4.2	15	1.9	7	.7	3	.1	1	.5	2
9	369	86.0	317	14.0	52	4.0	16	6.1	22	.8	3	1.4	5	.3	1	1.3	5
8	323	86.0	278	14.0	45	4.0	13	6.1	19	.8	2	1.4	5	.3	1	1.3	5
7	314	86.0	270	14.0	44	4.0	13	6.1	20	.8	2	1.4	4	.3	1	1.3	4
6	369	63.5	234	36.4	135	25.8	96	6.0	21	1.6	6	1.1	4	1.1	4	1.0	4
5	419	63.5	266	36.4	153	25.8	109	6.0	23	1.6	7	1.1	5	1.1	5	1.0	4
4	92	83.8	77	16.2	15	5.2	5	6.6	5	1.3	1	2.3	2	.3	1	.6	1
3	98	83.8	82	16.2	16	5.2	5	6.6	6	1.3	1	2.3	2	.3	1	.6	1
2	110	83.8	92	16.2	18	5.2	6	6.6	7	1.3	1	2.3	2	.3	1	.6	1
1	108	83.8	90	16.2	18	5.2	6	6.6	7	1.3	1	2.3	2	.3	1	.6	1
K	116	83.8	97	16.2	19	5.2	5	6.6	7	1.3	2	2.3	3	.3	1	.6	1
HS	48	83.8	40	16.2	8	5.2	2	6.6	2	1.3	1	2.3	1	.3	1	.6	1
TOTAL	3421	81.5	2791	18.4	630	8.9	305	5.2	181	1.3	47	1.2	42	.7	21	1.0	34

pupils from that racial group to a significant amount. The minimum figure for any racial minority group was approximately 10 percent, but it was believed necessary to keep it around 15 to 20 percent for Negro pupils if possible.

Table 2 indicates that even with the inclusion of Mann and Colman Elementary Schools the percentage (8.9) of Negro pupils in the Southeast Education Center would be far below the upper limit set by the Final Report, well below the "if possible" lower limit of 15 to 20 percent believed desirable for the Southeast Education Center, and even below the absolute minimum of 10 percent.

This percentage of 8.9 Negro pupils is achieved with an imbalance in the various grade levels. Using the gross groupings of grades defined as the primary and including preschool through Grade 4 and Grades 5 through 8 and 9 through 12, the percentage of Negro pupils in each of these units is as follows:

TABLE 3

Unit and Grades	No. Enrolled	No. Negro	% Negro
Secondary (9-12)	1,424	45	3.2
Intermediate (5-8)	1,425	231	16.2
Primary (K-4)	572	29	5.1
Total Center	3,421	305	8.9

To raise this Negro percentage by incorporating all of the 9th Grade students at Washington Junior High School would mean the addition of Washington's 255 students to the 1,424 students in the secondary unit, or a total of 1,679 students in Grades 9-12 in the secondary unit. With a 1967-68 percentage Negro enrollment of 72.9 at Washington, this would mean the addition of 186 Negro students to the 45 already included in the secondary unit, or a total of 231

Negro students in Grades 9-12 in the secondary unit. The final percentage of Negro students in the secondary unit would then be 13.7. The final total of Negro students and pupils in the Southeast Education Center would become 491, a percentage of 13.3 in a combined enrollment of 3,676 in the Southeast Education Center for all racial groups.

The essential point, however, is that a significant number and percentage of Negro pupils and a relatively proportionate number and percent of other racial groups will be incorporated in the Southeast Education Center so that the needs of integrated education and, importantly, an adequate research design for the Southeast Education Center are met.

School Attendance Characteristics

An important measure of the home-and-school situation in any school attendance area in Seattle is in the form of attendance data, defined in this case as absenteeism, suspension rate, and drop-out rate. Increases in such rates can usually be attributed to a combination of school program and home environment factors which, together, make it virtually impossible for a pupil and student to conform to the requirements of a school or to maintain an active and healthy interest in the ongoing school programs. Such an increase is also positively correlated with an increase in poor home living conditions, both physical as well as psychological. It would be safe to assume that census tracts, such as R4A, and perhaps R5A, would produce more of such conditions and thus would have an inordinate share of the pupils and students who are absent, suspended, or who drop out of school.

Table 4 is a summary of attendance data (where applicable) for the schools involved in and affected by the Southeast Education Center over a two-year period, 1964-66. The data covers absenteeism, suspension rates, and drop-out

rates and is in the form of rates and ranks.

The ranks refer to the standing of each school in its own group, senior highs in the senior high grouping, junior highs in the junior high grouping, and elementary in the elementary school grouping. For the ranks to be meaningful, keep in mind that they are based on 12 senior high schools, 18 junior high schools, and 86 elementary schools.

The two-year period is divided into two separate years so that changes from one year to the next might be seen clearly.

Mann and Colman Elementary Schools are included in the list purely for comparison purposes, because they will be feeder schools to the Southeast Education Center. Otherwise, our references are to the schools in and near the Southeast Education Center attendance area (immediate vicinity).

Rainier Beach Senior High School has increased in all three of these indices, absenteeism, suspensions, and drop-outs, while the city as a whole (senior highs) increased in only two, absenteeism and drop-outs. However, the junior high school changed its rank in only the suspension rate, from second to fourth, meaning that it now has a higher relative suspension rate than it had.

Rainier Beach Junior High changed its ranks in two areas, absenteeism and suspensions. It now has a higher relative absenteeism than before and a lower relative (and absolute) suspension rate than before.

The data for the elementary schools is not as meaningful as it is for the senior and junior high schools mainly because suspensions are not commonly used as indices for pupils in the elementary school age levels. However, there are some comparisons to be made, especially inter-school.

TABLE 4

	ABSENTEEISM				SUSPENSIONS				DROPOUTS			
	1964-65		1965-66		1964-65		1965-66		1964-65		1965-66	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
Rainier Beach Senior High	5.53	7	6.12	7	2.27	2	2.63	4	4.39	4	6.13	4
City Senior High (12)	5.95	-	6.65	-	4.14	-	3.72	-	5.59	-	6.90	-
Rainier Beach Junior High	4.11	2	5.57	5.5	2.27	10	1.71	6	1.49	15	1.11	14
City Junior High (18)	5.20	-	6.36	-	2.64	-	3.35	-	.95	-	.88	-
Mann	6.27	82	6.40	76	1.93	85	.80	78.5	-	-	-	-
Colman	6.03	80	7.64	84	.75	76	.94	81	-	-	-	-
Dunlap	5.63	74	5.95	61	1.52	69.5	.15	47	-	-	-	-
Emerson	4.31	25	4.75	17	-	-	-	-	-	-	-	-
Rainier View	3.83	7	4.95	24.5	.47	67	.23	55	-	-	-	-
South Van Asselt	4.70	-	4.37	7	-	-	-	-	-	-	-	-
City Elementary (86)	4.88	-	5.54	-	.28	-	.25	-	-	-	-	-

Mental Ability and Achievement

In the following tables are data on the general mental ability and achievement levels for pupils and students who would be involved in the Southeast Education Center. Because of the nature of the Seattle Public Schools' city-wide testing program, such data are for Grades 4, 6, 8, and 10, rather than for all grades from K through 12.

Tables were prepared of mental ability test scores for the pupils typically in Grade 4 in the six feeder elementary schools, Mann, Colman, Rainier View, Emerson, South Van Asselt, and Dunlap Elementary Schools.

Each table includes the actual distribution of intelligence quotients for each school. At the bottom of each table is shown the number of pupils, the mean IQ, and the standard deviation of IQ's in the distribution. Thus, not only is it possible to compare the means for each school with each other school, but also the actual distributions of the numbers of pupils with IQ's in the total range. For example, Rainier View had 55 pupils whose mean IQ was 110. The lowest IQ for Rainier View was in the 69-71 cell, and the highest was in the 132-134 cell, a range of 66 IQ points. At the same time, for Mann, there were 35 pupils whose mean IQ was 92. The lowest IQ for Mann was in the 75-77 cell, and the highest was in the 111-113 cell, a range of 39 IQ points. Thus, although Rainier View perhaps had one pupil with a lower IQ than the lowest Mann pupil, the range at Rainier View was larger, and, over-all, the result was a generally higher IQ level at Rainier View than at Mann.

Tables prepared for this study are available in the Research Office for examination.

Other tables show the achievement test scores in four areas, reading, language, arithmetic computation, and arithmetic problem solving and concepts

for the same pupils.

The achievement test scores are in terms of standard scores for the sake of making comparisons easy and clear. Standard scores, as used here, are based on a mean of 50 and standard deviation of 10, so that every increase of 5 points is perhaps significant.

One of the first things clear in the data in all of these tables is the fact that there are extremes in the student and pupil groups for each school; that is, high and low pupils in terms of mental ability and achievement. It is hypothetically possible to divide the pupils into workable groups according to achievement or mental ability. It is even possible the schools have no effective program for pupils below a certain achievement and/or mental ability level. Pupils with IQ's above 75 and below 90 are difficult to place in a typical, regular school program as it is defined in most of Seattle's schools today. This kind of pupil is, in effect, locked into a system which does not allow for his own unique speed and mode of learning. The data in all of the studies of test scores indicate that the proportion of pupils who would be in the Southeast Education Center with this level of mental ability and achievement (just below average to very low average) is between 15 to 25 percent. In a feeder school, such as Rainier View, the proportion would be 10 to 12 percent, while in a school such as Mann the proportion would be 50 to 65 percent. Certainly in the continuous progress-type program these types of pupils would be able to find their level quickly and perhaps would adjust to what would then be a "regular program."

Other Pupil Personnel Characteristics (Based On An Analysis of the Emerson School Records)

The type of pupils coming to the Southeast Education Center from feeder

schools, such as, Emerson, Rainier View, and Dunlap, and to some degree from South Van Asselt, can be described as follows:

1. Twenty-eight percent of them have been in two or more schools prior to coming to the feeder school.
2. Two percent of them have a history of health problems which have interfered with some school work.
3. Ten percent of them have been referred to a social worker for home-and-school problems.
4. Eleven percent of them have been referred to a school psychologist for individual evaluations, both for emotional and academic reasons.
5. Twenty-two percent of them have received at least one year of reading improvement instruction.
6. Eleven percent of them have been involved in an able learner program of some type (for example, the Accelerated Primary Program).
7. One percent of them has had speech improvement training.
8. Eighty-five percent of them have intact homes in which the real father and mother are present.
9. Their attendance record shows an absenteeism rate of five percent of school days.
10. Their mean grade point average in reading, language, arithmetic, social studies, and science is C+.
11. Ten percent of them have a citizenship record that is less than satisfactory.
12. Five percent of them have a promotion record that is less than satisfactory.

Enrollment by Feeder School

The probable enrollment in all of the schools in grade groupings is summarized in the table below.

Participating School	Estimated Number to be Attending Intermediate School	Number Remaining Behind	(All figures are based on 1967-68 enrollment data)
Mann	53	360	(Grades Head Start through 4)
Colman	155	463	"
South Van Asselt	54	173	"
Dunlap	199	524	"
Emerson	225	624	"
Rainier View	102	302	"
Rainier Beach Jr. High	637	369	(Grade 9)
Rainier Beach Sr. High	0	1,055	(Grades 10 through 12)

ATTENDANCE AREA CHARACTERISTICS

In recent years, perhaps as in the past, the voting public in the area surrounding the proposed Southeast Education Center (Rainier Beach Junior-Senior High and Dunlap Elementary Schools) has generally supported the annual school levies submitted for popular voting. The support has not been, except for one year (March, 1962) overwhelming, but it has been, with the exception of one or two cases, favorable and greater than for the city of Seattle as a whole. In Table 5 is a breakdown of the voting results for eight special levies in the past, showing only the "Yes" numbers and percentages and using Rainier View, Emerson, Dunlap, Brighton, Graham Hill, and Van Asselt Elementary Schools' voting stations as the standard for the Rainier Beach area and also

showing the over-all Seattle city result.

Figure 1 is a census tract map of Seattle. It shows that the attendance area being described in the special levy results is enclosed within census tracts R4A, R4B, R5A, and R5B. In its Population and Housing Data report of August, 1965, the King County United Good Neighbors agency provided some socio-economic and population-housing data on this attendance area which give some insights into the people and children enclosed within the area. Tables 6, 7, and 8 summarize some of this data.

Two tracts are below the city average on the socioeconomic scale used by King County United Good Neighbors, R4A and R5A. Both of these tracts are on the west side of the Rainier Beach area and generally are in the South Van Asselt and Dunlap attendance zones. Tract R4A in the northwestern quarter of the area, around the South Van Asselt zone, is perhaps the most critical tract since it is the lowest of all four tracts on the socioeconomic scale and is basically a tract in which there are relatively young people with a divorce rate that is higher than the city average, living in housing units which are more crowded than the city average, on incomes which are more than $2,000 below the city average, with less than a completed secondary school education. This is a tract which includes at least one major Seattle low-income housing project, and this fact alone accounts for much of the difference between census tract R4A and the other three tracts.

The other three tracts are relatively well off or at least are not critical in as many areas as is R4A. They, for the most part, are composed of fairly stable home owners with incomes and educational levels that are at, near, or above the city average. They could be classed as generally in the true middle class worker and white collar category.

SEATTLE CENSUS TRACT MAP

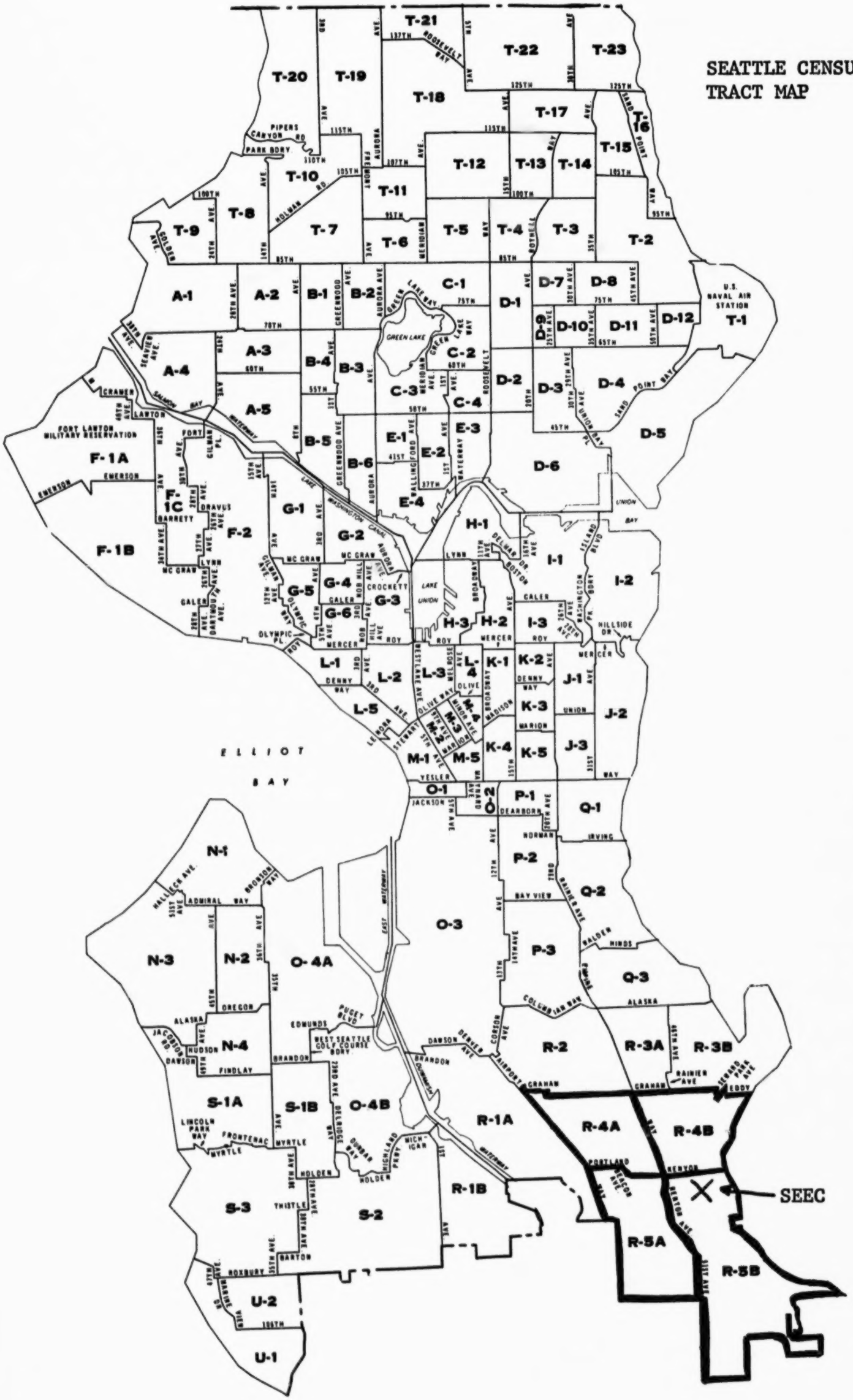


TABLE 5

SPECIAL LEVY RESULTS

Voting Unit	March, 1962 Total	Yes	%	March, 1963 Total	Yes	%	May, 1963 Total	Yes	%	February, 1964 Total	Yes	%
Rainier View	392	347	88.6	318	219	68.9	273	202	74.0	318	235	73.9
Emerson	1872	1648	88.0	1447	899	62.1	1343	868	64.6	1708	1146	67.1
Dunlap	1127	986	87.5	940	598	63.6	770	526	68.3	1012	723	71.4
Brighton	783	682	87.1	592	310	52.4	522	319	61.1	731	469	64.2
Graham Hill	1017	857	84.3	821	495	60.3	795	508	63.9	946	672	71.0
Van Asselt	1464	1300	88.8	1071	680	63.5	947	629	66.4	1201	854	71.1
Seattle city	--	--	84.5	--	--	56.8	--	--	60.7	--	--	67.1

Voting Unit	November, 1964 Total	Yes	%	November, 1965 Total	Yes	%	January, 1966 Total	Yes	%	November, 1966 Total	Yes	%
Rainier View	609	430	70.6	230	171	74.3	229	192	83.8	681	394	57.6
Emerson	2711	1746	64.4	830	635	76.5	926	683	73.8	2457	1329	54.1
Dunlap	1716	1167	68.0	748	574	76.7	836	654	78.2	1642	931	56.7
Brighton	1390	880	63.3	570	392	68.8	660	486	73.6	1004	559	55.7
Graham Hill	1520	989	65.1	794	575	72.4	889	662	74.5	1323	728	55.0
Van Asselt	2306	1602	69.5	834	662	79.4	983	767	78.0	1478	895	60.5
Seattle city	--	--	63.5	--	--	73.6	--	--	72.9	--	--	58.1

TABLE 6

SOCIOECONOMIC INDICES

Data	R4A Rank	R4A %	R4B Rank	R4B %	R5A Rank	R5A %	R5B Rank	R5B %	All Tracts Rank	All Tracts %
1. Socioeconomic index	103	296	50.5	154	65	200	47.5	147	--	175.5

TABLE 7

HOUSING INDICES

Data	R4A Rank	R4A %	R4B Rank	R4B %	R5A Rank	R5A %	R5B Rank	R5B %	All Tracts Rank	All Tracts %
1. Substandard Housing Units	37.5	1.8	74.5	4.7	51	2.3	54.5	2.5	--	11.5
2. One or More Persons Per Housing Unit	115	16.9	94.5	6.9	82.5	5.5	85	5.6	--	4.8
3. Persons Moving in From Outside Seattle	108	24.6	23	11.5	44.5	13.4	42	13.2	--	14.8
4. Housing Units Built Before 1940	103	22.7	73	50.1	91	34.0	92	33.6	--	63.4
5. Owner-Occupied Housing Units	92	37.7	48.5	71.9	18	83.3	50	70.8	--	53.3
6. Median Rent of Housing Units (dollars)	110	54*	38	94*	19	99*	25	98*	--	75*

*Not in percents but as indicated in parentheses.

TABLE 8

POPULATION INDICES

Data	R4A Rank	R4A %	R4B Rank	R4B %	R5A Rank	R5A %	R5B Rank	R5B %	All Tracts Rank	All Tracts %
1. Population 65 Years & Older	93.5	7.2	83.5	8.3	106	5.9	102	6.2	--	12.0
2. Children 7-14 Years of Age	8	18.1	22	16.4	52	14.4	14	16.9	--	10-15
3. Median Age of Females (years)	115	22.1*	91	30.6*	101	28.2*	103	27.9*	--	35.0*
4. Median Age of Males (years)	115	17.8*	94.5	28.6*	93	28.7*	97	27.7*	--	33.1*
5. Negro Percent of Population	97	3.9	79	.4	95	3.1	75	.3	--	4.8
6. Nonwhite Percent of Population	98	21.6	91	5.4	94	10.9	79	2.9	--	8.4
7. No. of Persons Per Household (numbers)	9	3.5*	22.5	3.3*	30	3.2*	17.5	3.4*	--	2.7*
8. Females Widowed or Divorced	36	22.3	73.5	16.0	101.5	11.4	96	12.6	--	20.0
9. Median School Years Completed (years)	92	11.1*	67	12.1*	59	12.2*	59	12.2*	--	12.2*
10. Percent of Professional and Managers	107	14.1	52	25.2	94	17.3	54	25.0	--	27.0
11. Median Family Income (dollars)	109	4,623*	37.5	7,320*	60	6,792*	44	7,171*	--	6,942*
12. Percent Change in Population 1960-64	56	1.0	9	11.3	4	15.4	11	8.7	--	1.2

*Not in percents but as indicated in parentheses.

CURRICULUM AND INSTRUCTION

A continuous progress curriculum is one which permits each student to progress at his own best rate through programs designed for him. His program of studies is individually tailored to meet his interests, abilities, aptitudes. In addition to individualized programs, continuous progress learning demands individualized instruction.

High priority is given to the basic skills and concepts in language arts and mathematics. Emphasis also is placed upon the study of the sciences and social studies. To balance and to complete the curriculum, opportunities are offered in the fine and practical arts and in health and physical education in occupational orientation and work experience. The sum total of educational experiences is not taught in isolation but is presented in a well coordinated, integrated whole.

The curriculum is based on what is known about child growth and development, the unique learning characteristics of children, and their need for a well designed continuum of educational experiences.

The structure of the curriculum is sequential and spiral grouping of concepts, understandings, knowledges, and facts. The curriculum emphasizes basic skills, values, and attitudes necessary to function in a democratic society.

Constant attention is given to the improvement of pupil performance. The variety of performance levels is adjusted to meet the capabilities of the student. In order to clearly understand the pupil's educational behavior, objectives in each part of each subject are stated as behavioral changes. The evaluation instruments are used by the staff to measure behavioral changes.

Flexible grouping of pupils is based primarily on performance criteria.

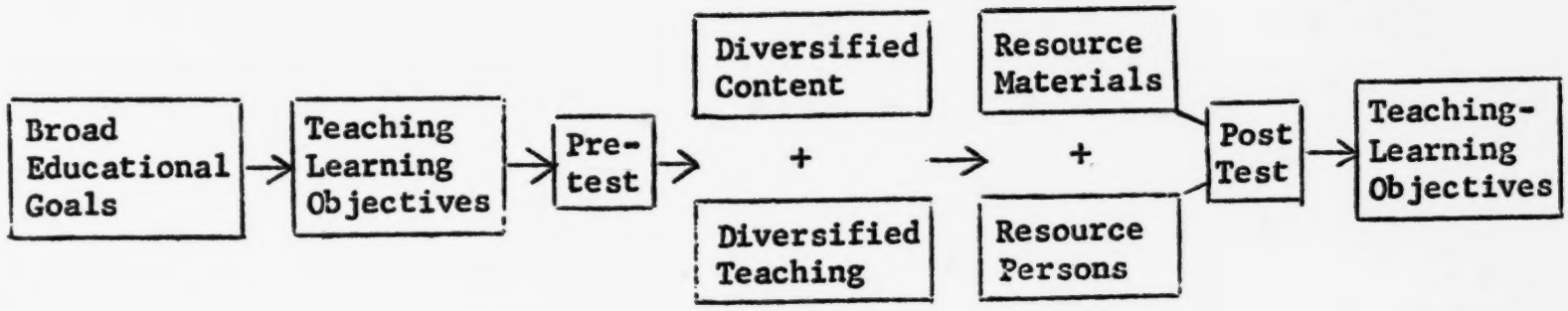
The variety of instructional-learning groupings includes teaching and guidance, partner instruction, small group instruction and discussion, as well as some large group instruction.

The separate elements of the teaching-learning process impinge upon each other; thus, appropriate group size is determined not only by learning objective and learner style but also by expressed preference about teacher activity, media, materials, mode, and relationship.

Concept and skill centered learning packets are prepared where appropriate continuous progress curriculum is not available. These learning packets are designed to help students achieve at their own best rates. The student then, with the assistance of the teacher, selects a continuous progress learning packet which is part of his continuum of experiences.

Built into the packet is a pre-test which will indicate to the instructor and to the student whether or not it is appropriate for the student to proceed. The learning packet contains diversified methodologies. Its varied content includes materials appropriate for a wide variety of learning styles. The behavioral objectives contained in the lesson are guides for the learners. As each student achieves an objective, he proceeds to the next, then again selects from the suggested learning activities and materials.

After the student achieves all of the behavioral objectives in each learning packet, he takes a self-test. If the self-test results indicate to the student that he is ready for a new concept and/or skill, he requests the final test. Upon the successful completion of this final test, the pupil may elect to proceed to the next appropriate learning experience or he may elect in-depth or quest study. Usually this is in keeping with his special interests. The diagram below illustrates this process.



Such a teaching-learning process always provides many opportunities for pupil-teacher interaction. Often these interactions take the form of seminars or discussions.

The teacher in such a continuous progress program plays a unique role. He monitors each student's progress, diagnoses learning problems, prescribes possible alternative learning situations and evaluates each student's progress. In brief, the teacher becomes a diagnostician, programmer, evaluator, counselor, instructor, and communicator. A systematic approach to teaching and learning emerges within a flexible framework wherein teachers in teams and as individuals evaluate each pupil's progress. Staff personnel including counselors, curriculum specialists, and researchers assist teachers in making decisions about pupils and the teaching-learning processes.

Teachers work in a team effort to develop appropriate, relevant, and challenging curricula and instructional strategies necessary to individualize instruction. They pool their talents to develop a wide variety of educational offerings designed to enhance teaching and learning. They work to develop diversified methodologies recognizing that any single concept may be learned through any number of approaches and that each learner has his own unique learning styles.

The instructional staff with the aid of counselors and other consultants develops evaluation instruments which measure the learning progress of each

pupil. These instruments will measure both quality and quantity of pupil performance in terms of pre-stated behavioral goals. Pupil progress reports to be used by the staff in the center differ markedly from conventional and multipurpose grade reports. Extensive data regarding the pupil's learning and forgetting, his emotional and social progress, and his changing interests and needs are recorded. Such records enable the school staff to design appropriate learning pathways for the pupil.

The ongoing in-service educational programs for the staff of the center keep administrators, teachers, and others concerned with the school program abreast of key innovations emerging in education. Experimental and pilot studies in schools here and elsewhere offer a wealth of ideas and are a continuous source of supply for the Education Center. Considerable assistance from local colleges and universities will enable the director of in-service education to plan, prepare and evaluate the pre-service and in-service education of the professional staff. In a sense, the Education Center can become a valuable source of information for the universities and colleges, and, likewise, the colleges and universities can become a valuable resource for staff of the center.

INTERRELATIONSHIP OF SPACES IN THE CONTINUOUS PROGRESS CENTER

It is generally accepted that the curriculum and the learning process determine the nature of the facility. From this it is apparent that with the shift of emphasis from group-paced teaching to self-paced learning, the opportunity for multiple experiences, wide curriculum choices, and increased movement by the student, the continuous progress center will differ markedly from conventional schools.

The need for flexible and convertible spaces in the continuous progress center cannot be overemphasized. There are four modes of flexibility which

need to be considered. First, the instructional groupings call for a variety of spaces, sizes, and functional capabilities. In the continuous progress center, the variety of spaces combined with effective, flexible scheduling will provide an opportunity to develop an individualized learning program. Some spaces may be quite specialized, while others will provide for varying degrees of multi-use capability.

A second mode of flexibility in the continuous progress center will be the capability of immediate change. In the day-to-day operation of the school, it will be possible to convert certain spaces immediately with an absolute minimum of time and effort. Such changes are apt to be necessary during the school day and generally take the form of temporarily reducing or expanding spaces in order to separate or bring together groups or activities. Such flexible spaces may need operable walls, readily moved by teacher or pupil. The educational center should use such temporary dividers as see-through book shelves, movable furniture, or simple space dividers.

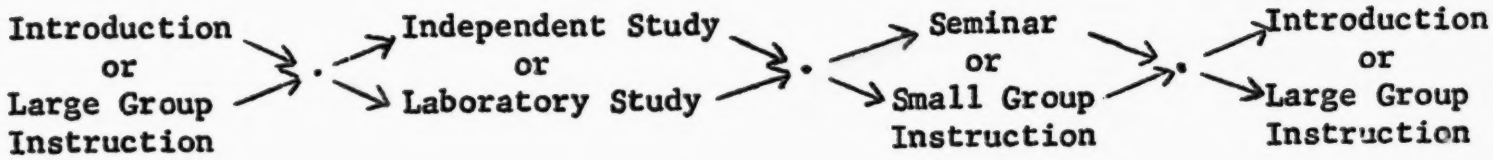
A third move of flexibility will be the long-range changeability or convertibility of space. Instructional and learning activities that take place in the center are expected to change from year to year. The demands for space rearrangement, therefore, must be flexible to accommodate and encourage new and better learning patterns and instructional strategies.

A fourth factor of flexibility in the continuous progress center will be that of expandability. As enrollments fluctuate, it will be necessary to accommodate pupils in an orderly expansion of numbers. It appears appropriate then to plan structures which possess this capability.

Reflecting the flexible school program and schedule, building spaces will be varied in size and planned specifically for the kinds of activities in which

students learn best. Flexible spaces for large group instruction, flexible spaces for group interaction and suitable spaces for independent study will be provided.

The recommended sequence of pupil activities in a continuous progress program may be expressed:


Introduction or Large Group Instruction
Independent Study or Laboratory Study
Seminar or Small Group Instruction
Introduction or Large Group Instruction

Independent study areas are spaces in which are found most of the learning activities of pupils. They form the core of activity and should be centrally located.

Surrounding the key spaces for independent study are areas where pupils engage in seminar and in discussion. Such spaces are often small and accommodate from 8 - 18 pupils. They may have been larger spaces which have been converted to smaller spaces by temporary visual and accoustical dividers. Thus, the number and sizes of such spaces may vary according to need.

A third kind of space is the area devoted to investigation through a laboratory or an inquiry approach. Students in groups of 15 - 30 engage in personal or partner studies in such key areas of learning as language, science, fine arts, and practical arts. Specialized equipment and supplies for these individual learning programs are found there. The open laboratory concept will be used. This will allow students to work in the laboratories and shops at any time that is convenient, provided that spaces in these facilities are available.

A fourth variety of spaces includes those areas appropriate for large group instruction. They will include a flexible auditorium, little theater, gymnasium

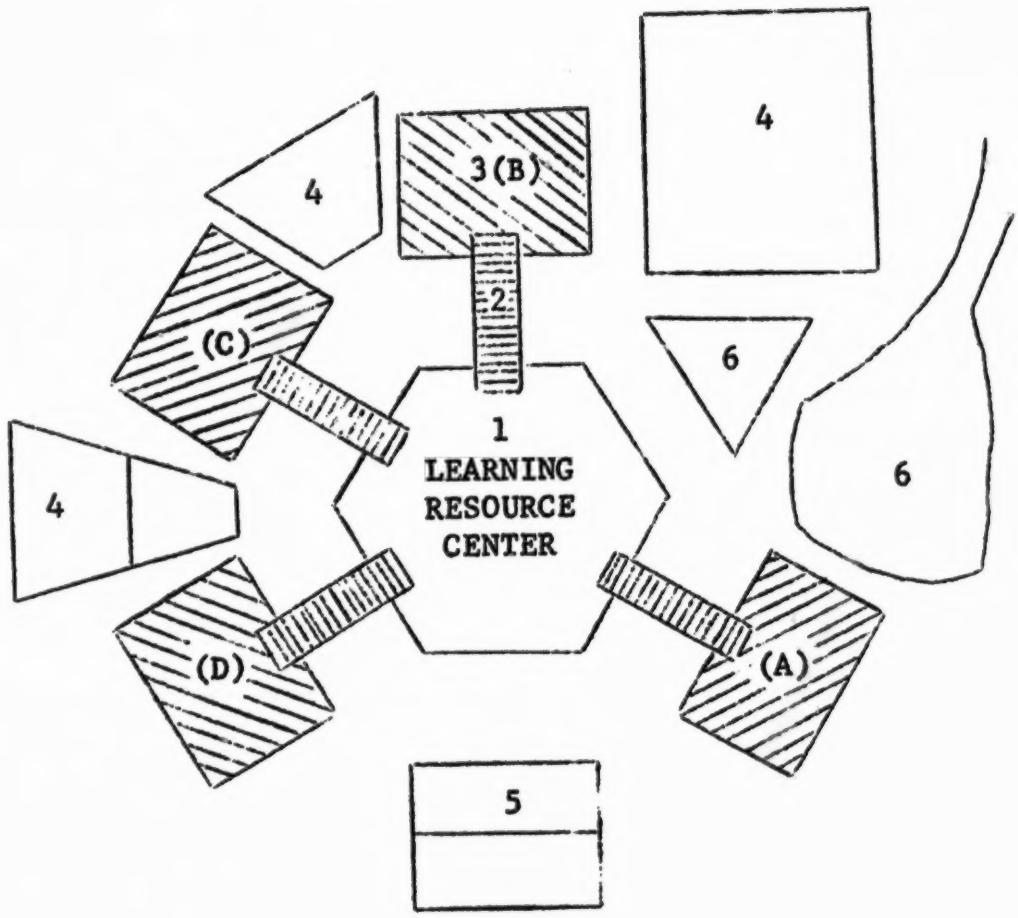
or fieldhouse, and playfields.

A fifth kind of space will be given to auxiliary functions. This will include administrative spaces, office and clerical work rooms, custodial, receiving, and disbursement areas. Spaces will be needed for such specialists as nurses, psychologists, programmers, counselors, technicians, and data processors. Conference rooms for the resident staff as well as suitable conference space for visitors will be needed.

A sixth allocation of space should be devoted to parking areas, walkways, courts, and outdoor instructional areas.

The arrangement of spaces in the continuous progress center will provide a myriad of learning opportunities for pupils in transition from the self-contained classroom situations of the elementary school to the departmentalized programs of the high school.

There are a number of possible arrangements of spaces appropriate to the continuous progress center. Below is a sketch which shows one possible combination.



1. Learning resource center
2. Seminar and small group discussion
3. Learning laboratories
4. Large group instruction and/or gymnasium
5. Auxiliary spaces
6. Parking and outdoor educational spaces

FACILITY SPACES AND THEIR FUNCTIONS IN THE CONTINUOUS PROGRESS LEARNING CENTER

Kind of Space	Number Required	% of Total Bldg. Space	Flexibility Requirements	Convertibility Requirements
Learning resource	1 main center and satellite centers	30-35%	Fixed	Space rearrangement within the center only
Seminar and discussion	4 main buildings (1 in each school)	20-25%	Flexible	Future conversion possible
Learning laboratories	In each of the main schools to accommodate most subjects	30-35%	Some fixed and some flexible	Somewhat capable of convertibility
Large group instruction	1 flexible use auditorium	10-15%	Flexible housing capability 120/240/720 students	Space rearrangement only by moving interior walls
Auxiliary spaces	10 required for administrative and supporting services	10-15%	Both fixed and flexible	

STAFF AND ORGANIZATION

The proposed members and kinds of staff members and their functions are based upon the new educational concepts inherent in continuous progress education.

New Emerging Role of the Teacher

The teachers will become both general educators as well as specialists. As general educators and team partners, the teachers will be expected to contribute to several basic educational functions. These are: (1) diagnosing learning problems, (2) preparing appropriate instructional programs, (3) teaching in the areas of the teacher's specialities, (4) evaluating the effectiveness of the programs, (5) counseling a certain number of pupils, (6) communicating with other staff members and parents.

To a far greater degree than ever before this will place highly professional responsibilities upon the teachers. Not only will teachers grapple with questions of what is to be taught but how it should be taught. They will be responsible not only for the preparation and application of programs but for the effectiveness of their efforts.

In expecting highly professional output from teachers, the School District also assumes new responsibilities. The School District policies and regulations must permit sufficient decision-making latitude. The District must provide appropriate staff development programs and adequate on-site specialists for teachers to learn and become comfortable in their new roles. Further, teachers can become effective only if schedules are flexible for both their team and individual assignments and if they are relieved of many nonprofessional duties.

There would be several important criteria for selecting teachers, including:

1. Teaching skills.
2. Depth of experience in one or more subject fields.
3. Ability to apply the newer methods to teaching.
4. Ability to diagnose individual learning problems, to develop curricula and to measure performance.
5. Ability to communicate with parents.
6. Skill to counsel and guide a home room unit through a continuous range of successful learning experiences.
7. Sensitivity to individual behavioral needs of children.

Articulation

Continuous progress implies that the school must maintain flexibility for staff assignments, use of facilities, progress of pupils, interrelationship of programs.

Community School

The community school concept implies not only that the school share its resources with the community but that, conversely, a greater effort be made by the community to provide support for the school.

An important need of large city systems is to close the communication gap between schools and the community. The Southeast Education Center will involve parents and other residents directly in the planning, evaluating, and communicating procedures through the establishment of a Southeast Education Center advisory council by the Seattle School Board. All interests of the community will be represented on the council, as will the community college and adult and other agency interests. This proposed semi-autonomous sub-board will not preempt the prerogatives and assigned legal authorities of the Seattle School Board, but will serve as catalyst, evaluator, investigator, interpreter, and

modifier. This segment of the Southeast Education Center system in itself will become a model for future extension of the District's efforts to reduce the communications gap.

In any large urban environment there are abundant opportunities to bring people with significant experiences, talents, and skills to the schools. There are in the Seattle area outstanding people in almost every field of endeavor, from sports to medicine. There are physicists, mathematicians, painters, musicians, writers, lawyers, public officials, craftsmen, architects, mechanics--practically an unlimited reservoir of talent.

Extensive use of these resources would be made by the center to present to the pupils a broad spectrum of the cultural, social, economic, and racial aspects of the community and at the same time reinforce and expand the learning activities.

Conversely, opportunities to take children to community resources would be greatly expanded by the center's bussing arrangements.

Both situations will expand the total as well as the educational environments of the children.

Special Functions of the Center

As a research, development, demonstration, and dissemination center, this institution will provide invaluable information to the School District for its long-range planning and development decisions.

The center will become a laboratory for demonstrating new teaching technologies, new administrative patterns, new community relationships, new instructional procedures, new staff development programs, new organizational patterns.

The list of research opportunities will become much longer as the programs

evolve. Needless to say, appropriate special staff members and resources will be required to make evaluations and interpretations of the outcomes.

Role of Administration

A central over-all administration will be required if efficient articulation of programs, pupils, staff, facilities, and planning is to emerge.

Because the staff support and development role is vastly more significant in a development and demonstrating setting, the central center administrative group should consist of various specialists who would serve all schools in the center.

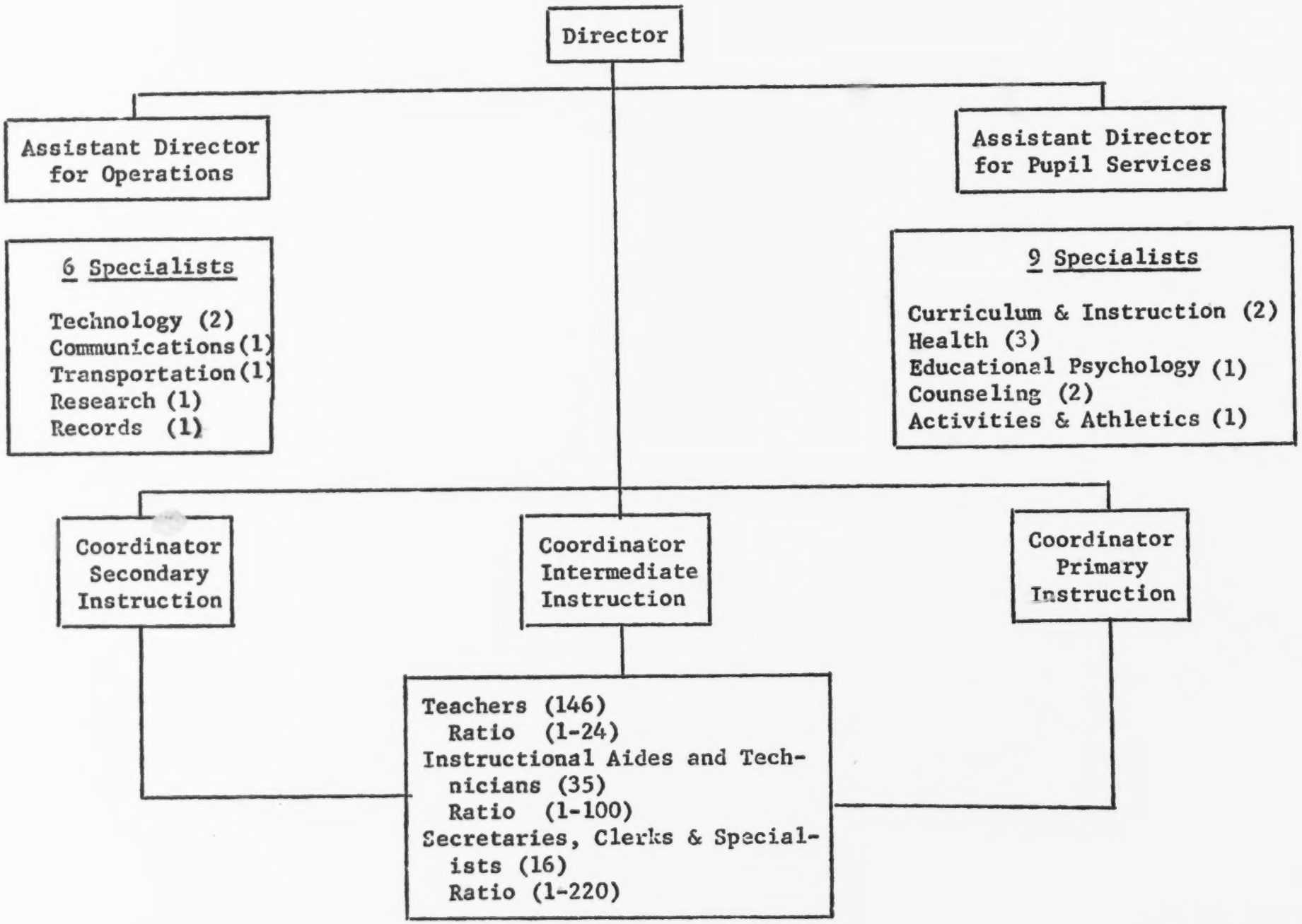
Articulation also should appear among the center schools and its feeder schools. The extent to which the center administration can or should assume this responsibility required further investigation by the planning staff.

Organization

The organization below is proposed as necessary and adequate to assume the responsibilities assigned to the center.

SOUTHEAST EDUCATION CENTER

PROPOSED ORGANIZATION AND STAFF



TECHNOLOGY

To perform effectively the roles so often assigned to it, education must become more efficient. Electronic data processing is not an advanced art in the field of education. Information processing is for the most part still accomplished on paper by pencil, pen, or typewriter. Innovations in curriculum and instruction utilizing the computer are still in the research and development stages.

In view of the more extensive use of the computer in other fields and industry, one must conclude either that EDP methods cannot solve educational problems or educators as yet lack knowledge of the potential of EDP and how to implement it at a practical level.

When the computer has been applied appropriately to educational data, it has reduced the amount of professional time and energy needed for clerical operations, processing, developmental work, resource utilization and in depth inquiry not previously possible in a manual system. The most valuable result of the introduction of computer technology to education has been in the development and backup of educational software. This has necessitated a "systems approach" to schedules, procedures, objectives, assumptions, and rules.[1]

Following is a breakdown given by John I. Goodlad in his text Computers and Information Systems in Education of the problems in education appropriate for electronic data processing followed by his recommendations. Included are some additions by the task force which are important to the Seattle School District.

GENERAL POLICY AND ADMINISTRATION

Raw Data	Data Relationships	Decisions and Research
Codification and systemization of school laws, sources of funds, health and safety regulations, etc.	Effect of new policies on school health and safety records	Study of relationships between policies and teacher and student effectiveness
Results of polls on citizen expectation for schools	Patterns of relationships between sub-publics and types of expectations for schools	Management information systems
	Relationships among types of administrative problems and processes used in decision-making	Conceptualization of possible new relationships and simulation of the consequences of effecting these relationships administratively

FACULTY, STAFF AND STUDENTS

Comprehensive inventories of teacher backgrounds	Relationships between age, institution attended, credentials, etc., and teacher retention in the system	Staff information systems
Long-term collections of data on student achievement, attendance, health, dropout, etc.	Relationship between school achievement and student health	Prediction of student achievement in school from longitudinal data, followed by deliberate manipulation of the environment and analysis of the consequences

BUDGET AND FINANCIAL SUPPORT

Raw Data	Data Relationships	Decisions and Research
Statistics on school costs broken into budgeted categories		
Maintenance of assessed evaluation statistics and data pertaining to proportion of District income spent on education	Relationships between financial support and various evidences of school productivity	Decisions pertaining to school bond referendums and building construction in relation to alternative predictions of population growth and financial support, together with calculations pertaining to how much new industry will be attracted by new and better schools

FACILITIES

Cost statistics on all aspects of school construction and maintenance	Relationships between costs of various types of construction and costs of maintenance	Manipulation of facilities to test hypotheses growing out of observations from Data Relationships

CURRICULUM, INSTRUCTION, AND MATERIALS

Number of students in various patterns of curriculum	Relationships between student high school curricula and later academic and work careers	Computerized instructional programs
Student responses on programmed lessons and courses	Relationships between responses and age, IQ, past achievement, etc.	Study of student learning styles and various provisions for them, such as different sizes and types of groups
Storage and retrieval of data on student assignment to individual instruction, large groups, small groups, etc.	Relationships between student assignment and various aspects of student success	Manipulation of the instructional-grouping environment to test hypotheses growing out of observations at Data Relationships

Summary of Observations

1. No further research needs to be directed toward answering the question of whether it is practical and useful to apply automation to the solution of educational data processing problems.

2. The field of education is still primitive in its use of EDP for those mass procedures pertaining to personnel, budget, facilities, and materials in which business, industry, and the military already have effectively demonstrated the benefits in economy and efficiency.

3. The most formidable block to progress in educational applications of EDP is not the state of the data processing art but our understanding of education as it presently operates and is likely to advance, especially our insight into the relationship between the human beings involved and the vast accumulation of organizational, instructional, and various ad hoc techniques that presently constitute our education system.

4. There is a growing need for a literature of experience providing blow-by-blow accounts of how forward-looking states and school districts have resolved these difficulties of relationships and other problems in setting up automated school information processing systems.

5. There is a communication gap between educators in schools, colleges, and universities who are strategic to the ultimate utilization of EDP in education and those specialists--EDP technologists and information scientists--who are professionally involved in the theory and practice of automated information processing.

6. The most promising channels for research and development in educational EDP lie in determining those basic items of information that might constitute cooperative data processing systems, in standardizing nomenclature

and definitions, in providing for system and subsystem compatibility, in resolving the interface problems between educational processes and technological processes (including the training of personnel to effect this interface), in investigating the potentiality of automation as an aid to educational innovation and experimentation, in studying and effecting instructional decisions, and in demonstrating tested procedures that might serve as models.

7. Fund granting agencies, in considering requests for financial support, are being urged to look for the significance of a given project to education, its relevance to a wide range of applications, its possibilities in removing persistent roadblocks, its possibilities for dissemination and replication, its potentially cumulative contributions to knowledge, its possibilities for maximizing scarce resources, its provisions for field testing, its contributions to efficiency, and its possibilities for self-sustainment.

8. Fears that automation will bring into education the anonymity and dehumanization now apparent in many aspects of daily life--even fear of the manipulation of individuals by robots--exist in many minds. Such fears must be reckoned with.

Robert Egbert in his paper "The Computer in Education: Malefactor or Benefactor"[2] nicely summarizes our recommendation for the Southeast Education Center.

When "computers" and "education" are mentioned together, one might visualize the computer as a tool for scientific research, as a teaching aid for instructing students in the use of computers, or as a device for helping in the business operations of an educational institution. In these three roles, the computer

has amply demonstrated its utility. Few would question that the computer is now an important adjunct of the university research program; that computers in schools are necessary for teaching our future generation of computer engineers, programmers, and computer users; or that a computer can do much to facilitate and to permit integration of the various business activities of a large school system.

Although these have been the first uses of computers in education, investigators have more recently been studying the possibility of employing computers in instructional and organizational-administrative aspects of education; and in this light we make the following recommendation:

That the methods and technology be designed to produce efficient individualized instruction.

INSTITUTE FOR MATHEMATICAL STUDIES IN THE SOCIAL SCIENCES[3]

STANFORD UNIVERSITY

PROPOSED BUDGET FOR SUBCONTRACTS FOR ONE-YEAR PERIOD

	*20 Terminals	*30 Terminals	*60 Terminals
Specialized Central Facilities	$ 30,000	$ 45,000	$ 90,000
Software and Operations	44,000	55,000	66,000
Curriculum Development and Revision	22,000	22,000	22,000
PDP-8 and Teletype Rental	20,000	30,000	60,000
Technical Support, Travel, etc.	10,000	15,000	20,000
	$126,000	$167,000	$258,000

* Any number of terminals can be installed. The cost for any particular number can be interpolated from the above figures or can be obtained by contacting the Institute.

NOTE: The above figures do not include three major items:

1. Teacher workshop, the cost of which varies depending upon (a) whether the workshop is held outside or in the school system; (b) whether university credit is given to the participating teachers (this would involve tuition payments to the university); and (c) the length of the workshop (one to four weeks, depending on prior training of teachers).

2. Telephone line costs which vary from about $1.25 per mile per month for systems more than 1,000 miles from Stanford to $3.65 per mile per month for systems within the State of California.

3. Charges for placing terminals at locations other than primary terminus in the school system. Costs include $50 per terminal per month plus local line charges to each outlying terminal.

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1. Goodlad, John I.: Computers and Information Systems in Education. Los Angeles. Harcourt, Brace & World, Inc., 1966.

2. Egbert, Robert L.: The Computer in Education: Malefactor or Benefactor. Santa Monica, California, 1963.

3. Stanford University, Institute for Mathematical Studies in the Social Sciences, Stanford, California. Letter from Max Jerman.

TRANSPORTATION

Consultation with state, county, outside school districts, and inside our own District brought out alternatives with respect to transportation planning. (1) Seattle School District No. 1 can develop its own inhouse transportation system; (2) Seattle School District No. 1 can utilize commercial transportation services such as offered by Seattle Transit, Grayline Tours, Yellow Cab, Rapid Transit, etc.; (3) Seattle School District No. 1 can develop a transportation system of its own in limited form and simultaneously utilize commercial transportation services; (4) Seattle School District No. 1 can plan the continuous progress center without a transportation system.

Based on current costs of our Voluntary Transfer Program and bids for our Junior High Transfer Program, it is estimated that each student transported to the Southeast Education Center would cost $0.85 per day for a yearly cost of $155.55 per pupil per year (this cost is for an all commercially serviced program).

Currently, the State pays 90% of all transportation costs. Approximately 300 busses per year are purchased in the State at an average cost of $15,000 for each bus.

It is estimated that transportation costs for the Southeast Education Center for the first year will amount to $65,025 for 425 fifth and sixth grade pupils.

Breakdown of transportation needs for Grade 5 through Grade 8:

Feeder	Number to be Attending Intermediate Center	Number to be Bussed
Mann	53	53
Colman	155	155
South Van Asselt	54	24
Dunlap	199	0
Emerson	225	101
Rainier View	102	92
Rainier Beach Jr. High School	637	0
Totals	1,425	425

After careful consideration of transportation needs, implications, and costs, it is recommended that fifth and sixth grade pupils living more than one mile from the Southeast Education Center be transported at District expense.

RESEARCH AND EVALUATION

Research and evaluation procedures will follow traditional lines and will rely generally on traditional tools and techniques. A major task in the planning phases of the Southeast Education Center will be that of setting up the over-all research and evaluation design. This work will depend upon the results of curriculum and instruction planning for it follows that the evaluation of a program depends upon the goals and objectives devised for the program.

Some of the tools and techniques to be applied to the Southeast Education Center program include standardized tests of mental ability, achievement, interest, and, perhaps, attitudes. Such standardized tests, especially those of achievement, may be developed as the Southeast Education Center develops

primarily because, with the achievement tests, there is a need for a different perspective of pupils, namely, concept and skill level learning rather than general achievement learning.

Thus, concept-skill level tests of achievement are vital to teacher evaluation and diagnosis of pupil learning and learning difficulties, as well as to program evaluation. It would not make sense to discard all of the test development and data collected in the present Seattle city-wide testing program for it looms as a possibility to research the present standardized tests for possible use as skill-level measures. This would be fairly simple so long as we have an accumulation of test answer sheets with which to do item analyses.

The above point, regarding the accumulation of answer sheets, points up one important step during the Southeast Education Center planning phases. That is the development of base line data on present programs and systems so that later comparisons may be made when the Southeast Education Center is in operation. This applies not only to standardized testing but to all other tools, techniques, and the over-all research design. It also applies to one new evaluation technique--the cost/effectiveness research technique--to be used in the Southeast Education Center as a model for evaluation and research and development procedures of the future. In the interim before the Southeast Education Center becomes reality, it would be important to apply all research and evaluation techniques against the present program and system, including the cost/effectiveness technique.

The Southeast Education Center will lend itself well to all kinds of small research projects, some generated from outside the system, but most generated from within the Center by staff members. It will take coordinated efforts to make such projects possible without disrupting the over-all evaluation design

that would be more critical and could be easily affected by minor factors, for example, special achievement testing of small groups that would invariably change the over-all achievement test results as they are collected routinely.

One of the important areas to be included in the over-all research design is that of teacher diagnosis of pupils' learning speeds and modes and difficulties. Much of this can be handled with a carefully-planned program using, for the most part, group tests rather than individual tests of mental ability and/or achievement. The value of individual testing is lost in the face of mass demand for information on many pupils, not just one or two. Such diagnosis based on group tests has sound basis and can be made possible, but it will require some psychometric research in the planning phases for the Southeast Education Center. Based as it were on group tests, such a system of diagnosis can easily be understood and used by classroom teachers with a minimum of instruction and follow-on, so long as the research information simplifies test score data into decision-making information.

In the final analysis the questions about the Southeast Education Center narrow to one, practical question that stems from a point of view that is tied to the present program, namely, what will the Southeast Education Center accomplish that the present program is not already accomplishing? Perhaps the answer lies in the belief that the Southeast Education Center will perhaps not change the present program so much as it will change the present system of operation, including the handling of pupils' needs and interests.

One basic application of the continuous progress-type of program is that in tying together the various systems-with-a-system units, that is, what is presently known as <u>elementary</u>, <u>junior high</u>, and <u>senior high schools</u>. In the past and to a significant degree today these units do not work together as a

cooperative system, for example, staff members at the junior high school unit level argue that they should not test for the senior high schools, which means that, in Seattle, if the senior high schools want to use the results of the Differential Aptitude Tests, then that test should be given by the senior high schools, not by the junior high schools in ninth grade (giving it in ninth grade made it possible to have the results by the summer of the year the pupils entered tenth grade and, therefore, for some early planning for programs such as the prevocational training program).

If the Southeast Education Center contributes to a better and more continuous working relationship among all levels, then research and evaluation techniques should show that its value to such system function would place the Southeast Education Center in a favorable position; thus, the need for an adequate research design early in the planning phases.

Central to the successful function of the Southeast Education Center is a coordinated effort to provide information about all parts of the Southeast Education Center to staff members as they need such information. This opens up another facet of the research design, that is the measure of how effectively the Southeast Education Center accomplishes the information-collecting-and-dispensing function as compared with the present system. Figure 1 illustrates one kind of information system which is computer oriented but is under the control of the various components of the system, or the Southeast Education Center in this instance. This kind of information system will contribute much to the success of the Southeast Education Center and will be part and parcel of the over-all research design that will, among others, provide ideas about computer-assisted operation, its flexibility, its practicality, and, most importantly, its cost/effectiveness in implementing the continuous progress-

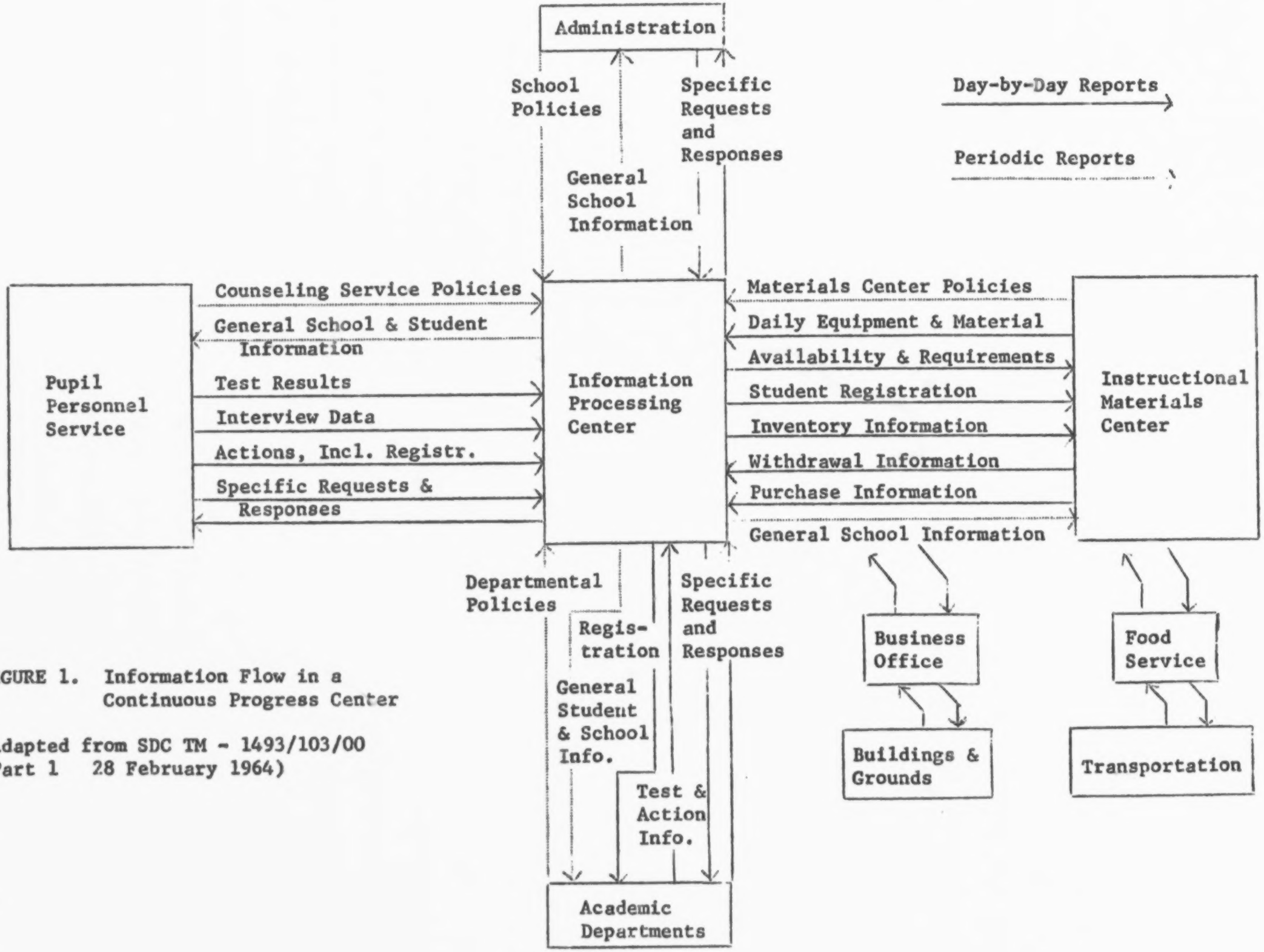


FIGURE 1. Information Flow in a Continuous Progress Center

(Adapted from SDC TM - 1493/103/00 Part 1 28 February 1964)

type of program. This information system will also contribute significantly to the general research and experimentation analyses resulting from the application of tools and techniques to the Southeast Education Center program and the collection of data from that program.

The cost/effectiveness evaluation technique referred to above is, as has been indicated, a new tool or technique in evaluation and experimentation and, to some observers, seems a little foreign to the area of evaluation, and yet this technique is clearly related to what any trained research-and-experimentation person knows is experimental design. Experimental design and cost/effectiveness technique are based on the need to define and describe a system so that any data collected from the system are interpretable. It is possible with a good experimental design to analyze all of the factors which affect the system and to gradually modify the system to eliminate the irrelevant and insignificant factors and "beef up" the relevant and significant factors. This is precisely what an adequate cost/effectiveness technique can accomplish. The only difference between calling one technique an experimental design and the other technique a cost/effectiveness technique is mainly in their respective contexts; the experimental design is rooted in scientific research while the cost/effectiveness technique is rooted in financial accounting. The cost/effectiveness technique also perhaps lends itself well to an over-all experimental design but actually the cost/effectiveness techniques can rely heavily on an adequate experimental design in accomplishing its, essentially, "good business practice" task.

One of the most recent attempts to apply cost/effectiveness procedures or technique to the educational setting was that by Technomics, Inc., 1455 Nineteenth Street, Santa Monica, California, under a grant from the U. S. Office

of Education dealing with evaluation of the effectiveness of projects funded under Title I of ESEA 1965. Although much of the work of Technomics staff members was frustrating, one of the outgrowths of the attempt was what Technomics refers to as The Educational Observatory: A Model for Rational Planning (a proposal dated June 13, 1967, which is pending pickup by interested school districts). This is a proposal to do systematic planning within a school system toward a logical application of learning theory principles and a concurrent application of experimental design and cost/effectiveness procedure so that the factors which are irrelevant and insignificant can be eliminated and their costs transferred to other more relevant and significant factors within the system.

Finally, one of the most important concerns of the Southeast Education Center is that it makes it possible for students and pupils to move through the system at the various learning rates and modes found individualized in any group. One of the major research and evaluation portions of the over-all design will begin with reasonable expectations for what should be learned in any given subject area over any given period of time. This will be based on psychometric and curriculum research findings combined with pupil personnel data which would have a major part in determining learning rates and modes. Follow-on would occur as the continuous progress program developed, and such follow-on would provide data with which to evaluate the degree of success of students in pursuing learning and which factors in the system are relevant and important to such pursuit, Isolating the factors will be the one area of greatest difficulty, but in its difficulty it will provide additional research data on how feasible it is to set up expectations for learning, to measure the progress of pupils through that learning, and to identify the relevant and significant factors. Thus, the Southeast Education Center becomes a vehicle

for doing research in the area of educational objectives-curriculum-instruction that would contribute locally and nationally to educational and psychological theory.

There are many tools and techniques, both traditional as well as new, that will be applied to the Southeast Education Center in all of the research and evaluation attempts. These include experimental design, cost/effectiveness procedures, psychometric research and development, standardized tests (mental ability, achievement, interest, attitudes), student/pupil reaction questionnaires, staff/administrative reaction questionnaires, visitor/expert reaction questionnaires, parent/community reaction questionnaires, but are not limited to these.

The Southeast Education Center is visualized as a research-development-demonstration vehicle which can lend itself well to model simulation and laboratory school-type implementation. The findings from such simulation and implementation can be used in modifying other parts of the Seattle system and cut down on the amount of isolated research that now goes on to answer questions about the system. On the other side, it also cuts down on the problems of trying out new models and innovations which might have adverse effects on the system, mainly by limiting them for the most part to the Southeast Education Center.

DISSEMINATION

The method of disseminating information about the program, according to the information content, will be through press releases, brochures, lectures, conferences, and television programs. Further, in developing plans for the Southeast Education Center, ample opportunities will be given citizens that they may react to the plans as they are being developed.

All information before it is disseminated will be tested against the criteria

listed for Title III projects, that is for clarity, validity, pervasiveness, impact, timeliness, and practicality.

Specific methods for disseminating information will be developed during the first phase of work within the framework mentioned above.

Dissemination will begin at the inception of the project in the form of public, as well as staff, meetings with the visiting consultants. These meetings will help participants understand the concept and establish the foundation for evaluating later reports. Full mass media coverage will be provided the consultants.

We will expect the Southeast Education Center advisory council to assume important functions in disseminating information and in establishing an effective liaison between the community and the School District.

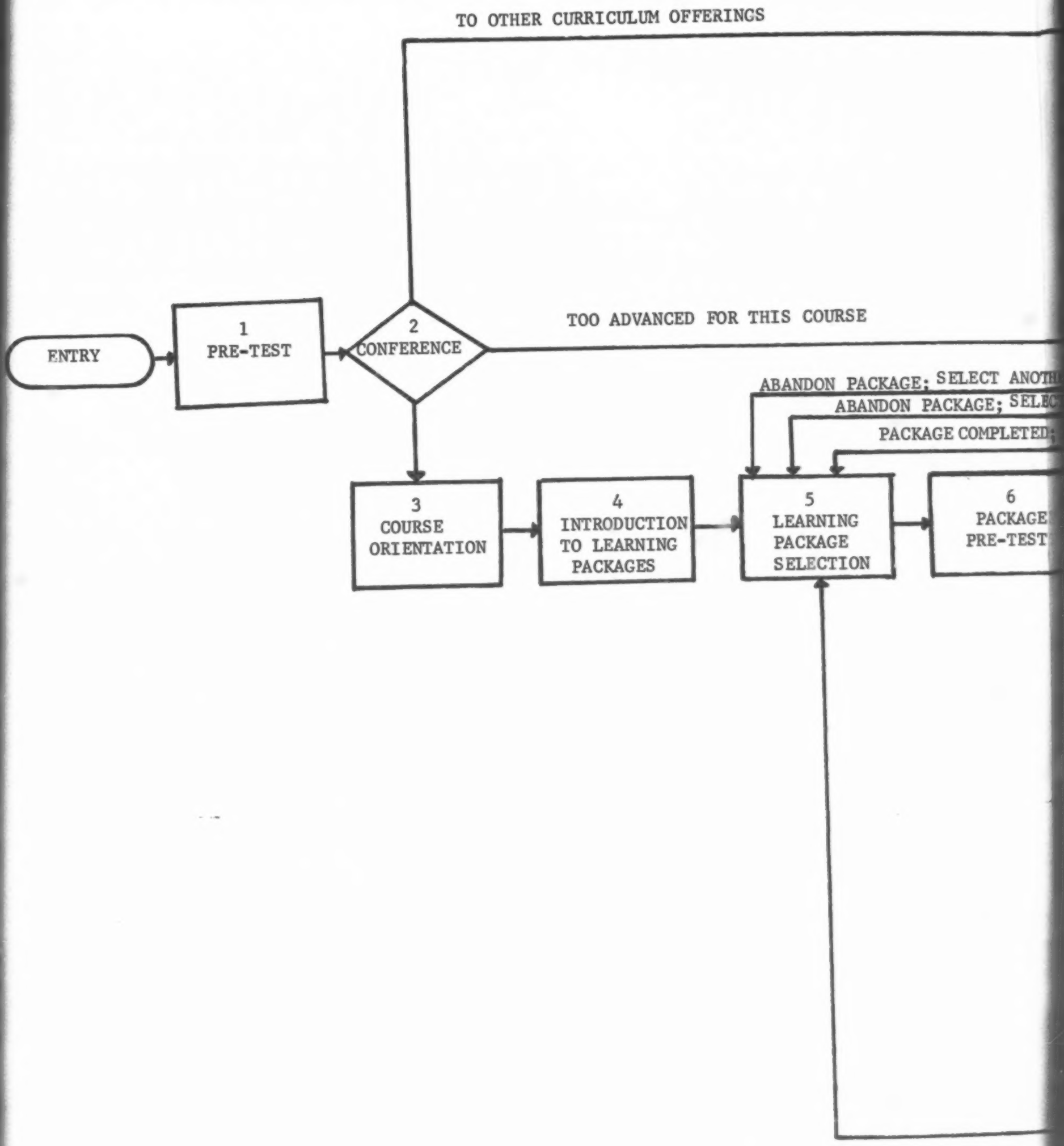
We will expect the State Office of Public Instruction to assist materially in disseminating information about the Southeast Education Center.

At the national level, ERIC, the consultants, and the participating foundations will interpret and distribute information.

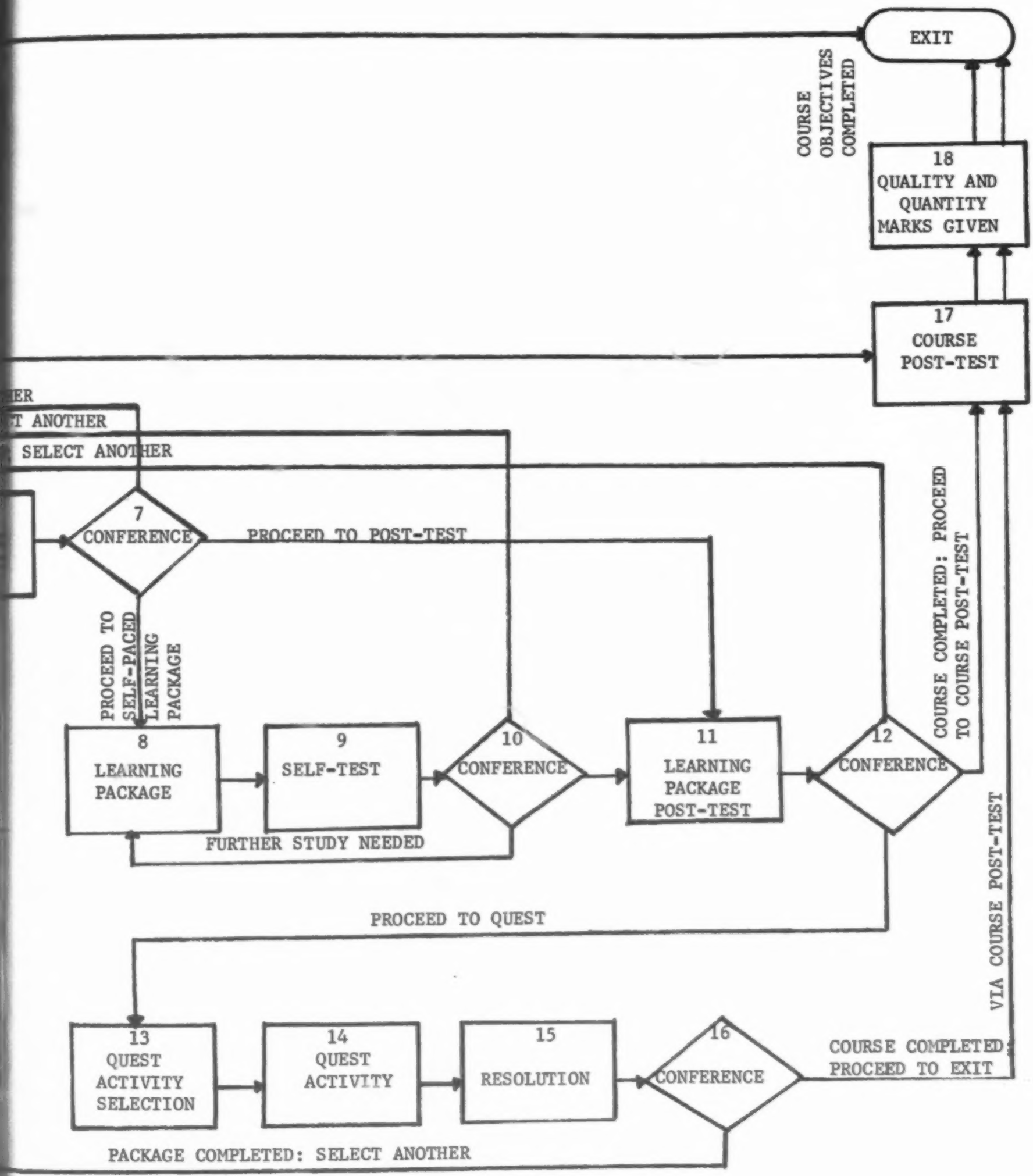
PROPOSED SELECTION LIST OF CONFERENCE CONSULTANTS

Name of Consultant	Present Association	Field of Expertise
Dwight Allen	Stanford	Scheduling
Carl Bereiter	Illinois	Disadvantaged
Benjamin Bloom	Chicago	Educational Objectives
Dale Bolton	Univ. of Washington	Organization
Jerome Bruner	Harvard	Psychology
Frederick Giles	Univ. of Washington	Administration & Articulation
John Goodlad	U.C.L.A.	Non-graded School Programs
Harold Gores	E.F.L.	Facilities
Robert Green	Michigan State	Disadvantaged
Walter Hill	Harvard	Educational Organization
Madeline Hunter	U.C.L.A. Elementary School	Instruction
Norton Kristy	Technomics, Inc.	Technology
Donald Lieu	Michigan State	Organization
Ernest Melby	Florida	Community School
Glen Ovard	Utah	Curriculum Packages
Harry Passow	Columbia	Grouping
James Russell	N.E.A.	Educational Objectives
Ole Sands	N.E.A.	Elementary School Innovations
Cyrus Sargent	N.Y.C.U.	Organization
Harry Silberman	Systems Development Corp.	Technology
Daniel Stufflebeam	Ohio State	Evaluation
Patrick Suppes	Stanford	Technology
Herbert Thelen	Chicago	Educational Strategies
Lloyd Trump	N.E.A.	Secondary Schools
Edwin Vause	I.D.E.A.	Innovations
L.E. Vredevoe	U.C.L.A.	Desegregation

CONTINUOUS PROGRESS LEARNING PATH USING LEARNING PACKAGES



Adapted from a chart by Dr. Philip G. Kapfer for Materials Dissemination Center of the Institute for Development of Educational Activities (IDEA), a project of the Charles F. Kettering Foundation


EXIT
COURSE OBJECTIVES COMPLETED
18
QUALITY AND QUANTITY MARKS GIVEN
17
COURSE POST-TEST
ER
T ANOTHER
SELECT ANOTHER
7
CONFERENCE
PROCEED TO POST-TEST
PROCEED TO SELF-PACED LEARNING PACKAGE
COURSE COMPLETED: PROCEED TO COURSE POST-TEST
8
LEARNING PACKAGE
9
SELF-TEST
10
CONFERENCE
11
LEARNING PACKAGE POST-TEST
12
CONFERENCE
FURTHER STUDY NEEDED
PROCEED TO QUEST
VIA COURSE POST-TEST
13
QUEST ACTIVITY SELECTION
14
QUEST ACTIVITY
15
RESOLUTION
16
CONFERENCE
COURSE COMPLETED PROCEED TO EXIT
PACKAGE COMPLETED: SELECT ANOTHER

CREDITS

This document was prepared for the Superintendent of the Seattle Public Schools, Forbes Bottomly, by the Task Force on Continuous Progress Education.

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